

ABSTRACT

To provide a method of driving an ultrasonic transducer capable of improving sound-speed measurement precision by improving detection precision of a zero-cross point and preventing the influence of the reflection on an open-side end face of a backing layer. The ultrasonic transducer 1 has a piezoelectric resonator 2 formed by a pair of electrodes 4 and 5 sandwiching a piezoelectric body 31 and provided with the backing layer 32 contacting with one of the electrodes 5 of the piezoelectric resonator 2 and having the same acoustic characteristic impedance as the piezoelectric body 3. The method includes the step of driving so as to satisfy a condition: $2T_h \leq T_d \leq 6T_h$ where T_h is a propagation time of an ultrasonic wave in the piezoelectric body 31 sandwiched by the pair of electrodes 4 and 5, and T_d is a pulse width of a drive pulse driving the piezoelectric resonator.